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L10: Entry 120 of 134

1330

File: DWPI

May 26, 2000

DERWENT-ACC-NO: 2000-416079  
DERWENT-WEEK: 200119  
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TITLE: Continuously cast steel sheet steel contains manganese, silicon, phosphorus, sulfur, titanium, calcium

## PATENT-ASSIGNEE:

ASSIGNEE

NIPPON STEEL CORP

CODE

YAWA

PRIORITY-DATA: 1998JP-0324389 (October 30, 1998)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 2000144330 A	May 26, 2000		008	C22C038/00

## APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
JP2000144330A	October 30, 1998	1998JP-0324389	

INT-CL (IPC): C21 C 7/00; C21 C 7/06; C22 C 38/00; C22 C 38/14; C22 C 38/54

ABSTRACTED-PUB-NO: JP2000144330A

## BASIC-ABSTRACT:

NOVELTY - Carbon steel contains (in weight %) 0.001-0.2 C, 0.01-0.5 Mn, 0.001-0.5 Si, 0.001-0.3 P, 0.0005-0.05 S, 0.006 or less of Al, 0.005-0.06 Ti, 0.0005-0.01 Ca, 0.0005-0.01 N, 0.0005-0.005 O, and remainder iron and unavoidable impurities. Oxide group inclusion of 53 microns or more is 200 pieces/kg and alumina cluster inclusion is 20 pieces or less per kg in casting.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for the manufacturing method of cast sheet steel.

USE - In continuous steel casting for casting steels for sheet metal rolling.

ADVANTAGE - The number of inclusions in the steel sheet is reduced sharply. Defects are reduced in the process of rolling. Yield is improved and inter-crystal defects are reduced.

CHOSEN-DRAWING: Dwg.0/3

TITLE-TERMS: CONTINUOUS CAST STEEL SHEET STEEL CONTAIN MANGANESE SILICON PHOSPHORUS  
TITANIUM CALCIUM

DERWENT-CLASS: M22 M24 M27

CPI-CODES: M22-G03A; M24-C07; M27-A04; M27-A04C; M27-A04M; M27-A04P; M27-A04S;  
M27-A04T;

UNLINKED-DERWENT-REGISTRY-NUMBERS: 1666U; 1669U ; 1725U ; 1734U ; 1738U ; 1779U

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File: DWPI

Sep 7, 1999

DERWENT-ACC-NO: 1999-555221  
DERWENT-WEEK: 200246  
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TITLE: Melting method of high pure and extremely low carbon steel - involves maintaining blow-in depth of lance and blow-in flow rate of inert gas blown into molten steel in ladle, within preset limits defined by specific formulae

## PATENT-ASSIGNEE:

ASSIGNEE

SUMITOMO METAL IND LTD

CODE

SUMQ

PRIORITY-DATA: 1998JP-0045736 (February 26, 1998)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 11241117 A	September 7, 1999		005	C21C007/10
JP 3297998 B2	July 2, 2002		005	C21C007/10

## APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
JP 11241117A	February 26, 1998	1998JP-0045736	
JP 3297998B2	February 26, 1998	1998JP-0045736	
JP 3297998B2		JP 11241117	Previous Publ.

INT-CL (IPC): C21 C 7/068; C21 C 7/10

ABSTRACTED-PUB-NO: JP 11241117A

## BASIC-ABSTRACT:

NOVELTY - Inert gas is blown from a lance into a molten metal in a ladle. The blow-in depth 'd' mm of the lance and blow-in flow rate 'g' of the inert gas are set to be within preset limits defined by relations  $0.8 \leq d \leq 0.07$ ,  $7 \leq g \leq 0.5$  and  $g = F/V$ , where F is the gas flow rate in Nl/min of molten steel in the ladle and 'V' is the amount of molten metal in the ladle in tons.

DETAILED DESCRIPTION - Decarbonization is performed on the molten steel contained in the ladle, using a vacuum degassing equipment, after being output from a converter. The density of (FeO+MnO) in a slag is reduced, by blowing an inert gas from a lance successively inserted into the molten metal in the ladle, after completion of a de-acid treatment under vacuum. The blow-in depth is the depth of lance immersion.

USE - For melting highly pure and extremely low carbon steel.

ADVANTAGE - The gain in inclusion of molten steel, after vacuum degassing can be prevented and the generation of surface crack in the product, can be reduced. An efficient melting of highly pure low carbon steel can be performed.

DESCRIPTION OF DRAWING - The figure shows a graph on the relation between the density of (FeO+MnO) in slag, the lance immersion depth and the inclusion number exponent in molten steel.

CHOSEN-DRAWING: Dwg.3/4

TITLE-TERMS: MELT METHOD HIGH PURE EXTREME LOW CARBON STEEL MAINTAIN BLOW DEPTH LANCE  
BLOW FLOW RATE INERT GAS BLOW MOLTEN STEEL LADLE PRESET LIMIT DEFINE SPECIFIC FORMULA

DERWENT-CLASS: M24

CPI-CODES: M24-C06;

UNLINKED-DERWENT-REGISTRY-NUMBERS: 1508U; 1936U

SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C1999-162533

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L10: Entry 120 of 134

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APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
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M27-A04T;

UNLINKED-DERWENT-REGISTRY-NUMBERS: 1666U; 1669U ; 1725U ; 1734U ; 1738U ; 1779U

# WEST Search History

DATE: Wednesday, January 15, 2003

<u>Set Name</u>	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u>
side by side			result set
	<i>DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=OR</i>		
L12	( steel same inclusion) and ((148/330 )!.CCLS. )	46	L12
L11	( steel same inclusion) and ((148/320 )!.CCLS. )	122	L11
L10	( steel ) same (number near inclusion)	134	L10
L9	( steel ) same (number near inclusion) same (c or carbon) same (si or silicon) same (al or aluminum) same (ti or titanium or nb or niobium or cb or columbium)	6	L9
L8	( steel ) same inclusion same (c or carbon) same (si or silicon) same (al or aluminum) same (ti or titanium or nb or niobium or cb or columbium)	333	L8
L7	( steel ) same inclusion same (c or carbon) same (si or silicon) same (al or aluminum) same (ti or titanium or nb or niobium or cb or clumbium)	329	L7
L6	(ultra-low near carbon near steel ) same inclusion	8	L6
L5	L4 and ((148/320 )!.CCLS. )	26	L5
L4	steel same non-metallic same inclusion	1454	L4
L3	steel same inclusion same ((pin near hole) or crack) same press	12	L3
L2	steel same inclusion same ((pin near hole) or crack)	418	L2
L1	steel same inclusion same (press near formability)	4	L1

END OF SEARCH HISTORY